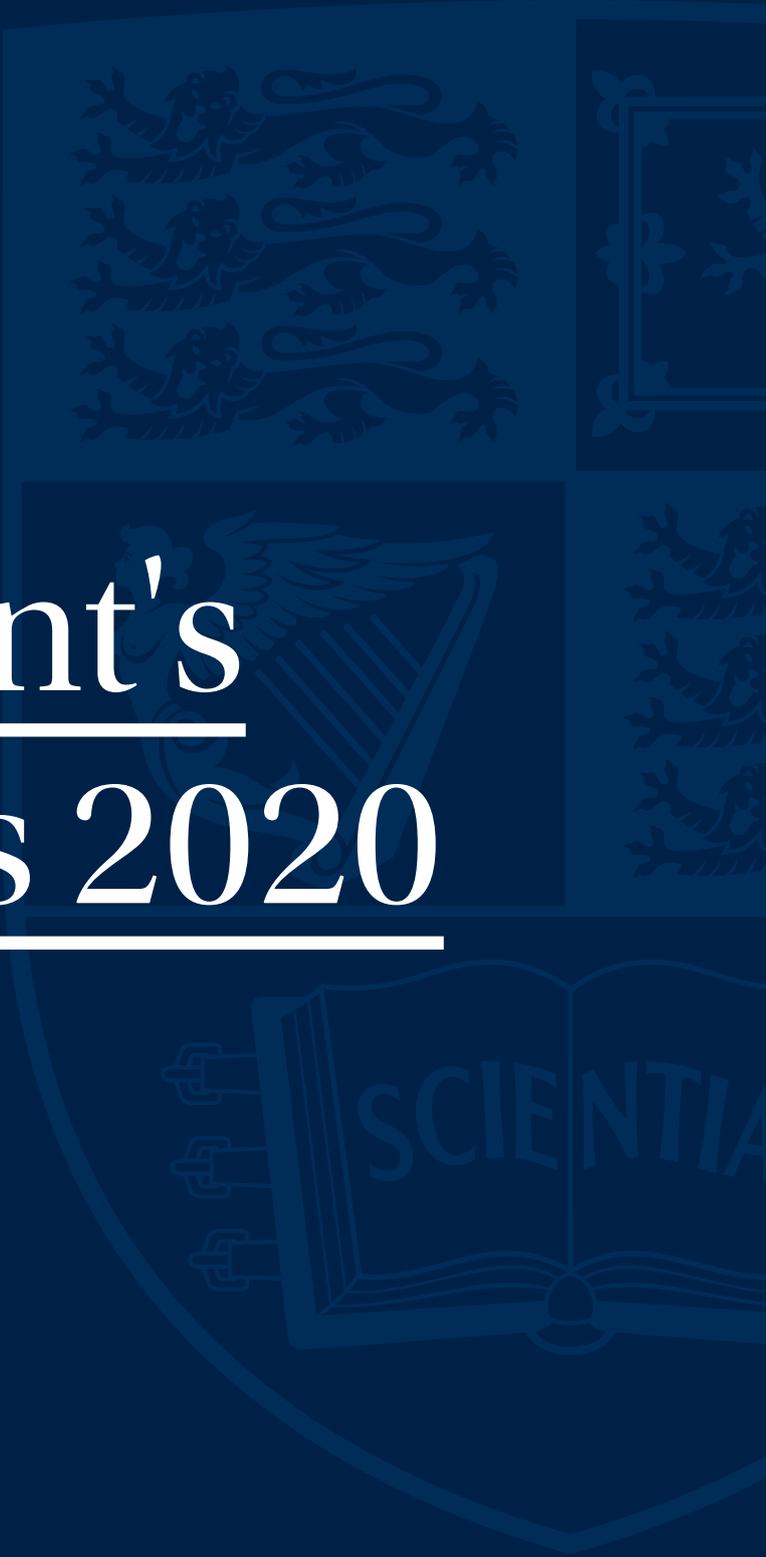


Imperial College
London

A large, faint watermark of the Imperial College crest is visible in the background. The crest is a shield divided into four quadrants. The top-left quadrant features three lions passant guardant. The top-right quadrant shows a quartered shield with a cross. The bottom-left quadrant contains a harp. The bottom-right quadrant depicts a tree. Below the shield is an open book with the word 'SCIENTIA' written on it.

President's Address 2020

The Right Note

The Right Note

Professor Alice P. Gast,
President of Imperial College London
City and Guilds Lecture Theatre, 11 March 2020



The President's Address

Each Spring the President delivers her annual Address to the College community and invited guests and we celebrate external accolades bestowed on Imperial staff, students and alumni.

The great jazz musician, Miles Davis once said:
"It's not the note you play that's the wrong note – it's the note you play afterwards that makes it right or wrong"

My affection for jazz goes back to my childhood.
Seeing Miles live was a turning point..

I had been a postdoc in Paris for two months. It was a dark and cold evening. I had never been to the new Palais Omnisport de Bercy in its forbidding location between the river and the railway tracks. There were scary people hawking tickets. Brad was away, but I was determined. It was a lifelong dream. I was going to see Miles Davis in concert.

Miles hunched over his horn and didn't look at the audience. He didn't play our old favourites – Miles usually said he preferred looking forward rather than back. The pure sounds of his horn sent shivers up my spine.

Why Miles, why jazz?

Jazz is all about improvisation.

Improvisation is seizing the opportunity or challenge placed in front of you and making it produce something new and exciting.

One of my favourite examples occurred in 2001 in New York's Village Vanguard.

Wynton Marsalis was playing a soulful ballad "I Don't Stand a Ghost of a Chance With You,". Writing in the Atlantic, David Hajdu put it this way:

He performed the song in murmurs and sighs, at points nearly talking the words in notes. ... When he reached the climax, Marsalis played the final phrase, the title statement, in declarative tones, allowing each successive note to linger in the air a bit longer.... The room was silent until, at the most dramatic point, someone's cell phone went off, blaring a rapid singsong melody in electronic bleeps. People started giggling and picking up their drinks. The moment—the whole performance—unravelling.

Marsalis paused for a beat, motionless, and his eyebrows arched. ...The cell-phone offender scooted into the hall as the chatter in the room grew louder. Still frozen at the microphone, Marsalis replayed the silly cell-phone melody note for note. Then he repeated it, and began improvising variations on the tune. The audience slowly came back to him.

In a few minutes he resolved the improvisation— which had changed keys once or twice and throttled down to a ballad tempo—and ended up exactly where he had left off... The ovation was tremendous.

Jazz improvisation does not arise from making things up as you go along. Great jazz musicians, like academics, have studied hard and honed their talent through thousands of hours of practice, in their case, playing, listening, learning.

Great jazz comes from strong foundations, trusting collaborations and risk-taking.

We are living in challenging times and our strong **foundations** will serve us well. We will also benefit from our **collaborations** and our ability to take **risks**. These three elements, foundations, collaborations and risk taking are central to great jazz performances, and indeed, central to many human acts at the epitome of excellence.

I believe that they will make all the difference for us personally, collectively and institutionally.

Our Foundations: Facts and Knowledge

As we meet here today, coronavirus is spreading rapidly around the world. Our hearts go out to all those adversely affected by the coronavirus, and any other health issues.

We are grateful to our GPs, pulmonologists, laboratory technicians, web programmers, hall wardens, security services, risk managers, tutors, counsellors, health services and so many others who keep us safe and make our lives run smoothly. This is also a time to reinforce our commitment to our community's diversity and our strong support for mobility of our students and staff. We stand united with all of those around the world who have been grappling with this crisis.

Imperial College London's mission is to achieve enduring excellence in research and education for the benefit of society. It is through this mission we make a difference.

We can be proud, inspired and ever more committed to this mission if we step back and look at what our colleagues are doing. Every day our epidemiologists, virologists, infectious disease experts, vaccine manufacturing experts, and technologists are working, behind the scenes, and in the news. They are providing discoveries, solutions and rational fact-based advice.

Our expertise, discoveries and risk-taking make a difference.

You also see this in the people we celebrate today. We celebrate Professor Molly Steven's nanotechnology breakthrough for early cancer detection; and the new and adventurous understanding of gravity by Professors Claudia de Rham and Andrew Tolley; as well as the important things we don't know in David Hand's book "Dark Data". We have new ways of teaching rapidly changing areas like AI and Machine Learning. We have Alumni like Professor Angela Vincent whose discoveries have saved lives.

Our students are brilliant problem solvers. A group of our students in Innovation Design Engineering with the Royal College of Art, invented the first device to collect polluting tyre particles emitted from vehicles, resulting in cleaner air around roads.

There are so many more, please join me in applauding those whose accolades we are celebrating today.

We have great foundations as a fact-based community and are fortunate to work at a place steeped in knowledge and driven by facts. Yet we must realise that today, facts are often subordinate to opinions.

We enjoy a highly connected world with information at our fingertips. This availability of information reminds us that our connectivity poses risks as well as benefits. We have seen this with the spread of coronavirus where sensational stories, phoney cures, and falsehoods have spread faster than the disease itself. Opinions and mistaken ideas often propagate more rapidly than facts.

There is good advice for our times in a book "Factfulness" by Hans and Ola Rosling and Anna Rosling-Rönnlund. They define Factfulness as:

"The stress-reducing habit of only carrying opinions for which you have strong supporting facts."

In these stressful times, this bears repeating:

"The stress-reducing habit of only carrying opinions for which you have strong supporting facts."

In a world where the advent of rapid social media has perhaps shortened our attention span and driven mainstream media to ever more sensational stories, we must critically assess what is presented, and be vigilant about disseminating accurate information.

Applying ourselves to crises, weighing risks, collecting and integrating facts, making decisions, and being able to adapt, are all traits that we value at Imperial.

With shared purpose, common foundations, strong values and a fact-based approach, we can be courageous in our work, and, we can strike the right note.

Today we put forward [our draft College Strategy 2020–2025](#) for your reactions and ideas. As we hone our strategy, we build upon many accomplishments, and add our new Academic Strategy with its aspirations and focus on societal benefit.

Collaborations near and far

Working closely with others is in our nature. We do so locally, regionally and globally.

Collaborating with our neighbours

In our College Strategy we said “we will share the wonder and importance of what we do”. We aspired to “create shared spaces for discovery and learning by working with schools and local communities”.

Today, thanks to the excellent work of our community engagement team and the generous support of several wonderful philanthropists, we can say that we are, indeed, sharing the wonder and importance of what we do. We opened the [Invention Rooms](#) in White City where we are providing life-changing opportunities to young people through maker-challenges and other programmes.

Much like a jazz ensemble, our teams of makers, are collaborating and improvising in new ways. We are creating new modes of community engagement, and building important networks in our White City neighbourhood.

Our Imperial Festival has been amplified by launching and supporting the [Great Exhibition Road Festival](#). Joining the 22 neighbouring institutions we are, again, showing that together we can do more than we can do separately.

In local, regional, national and international collaborations, networks of partners are essential.

Collaborating across our Country

The changes in the UK over the past year have given us opportunities to be seized and challenges to be met. There are risks to be taken and bets to be made. We have been at the heart of efforts to persuade government of the value of science, research and education to the future of the UK. We and our partners across the country in higher education, research and industry, successfully made the case for the UK investment in R&D to rise to 2.4% of GDP by 2027. Today the Government announced it will increase R&D funding to £22 billion a year

by 2025. We are now poised to take advantage of this immense opportunity, and we must be proactive.

Our [Academic Strategy](#) creates new opportunities to do just that. The first two initiatives in the strategy illustrate this well.

In the [Transition to Zero Pollution](#) initiative, our world-leading research and education comes together with strength and purpose to systematically address the problems of pollution. This complements the way our community is rising to the challenges posed by climate change through [Sustainable Imperial](#)'s work to help our campuses and every member of our community to reduce their carbon footprint.

A second initiative brings together our expertise and infrastructure, from molecular synthesis to AI, to revolutionise how we create new molecules, from new drugs to more effective catalysts, to meet a wide range of societal needs.

Making the most of these ambitious projects will require collaboration with partners in industry and research and higher education institutions across the UK and internationally. Investment must optimise outcomes for the UK as a whole.

Our ability to try new things, to provide an environment supporting individuals to be bold and take risks, and to work across disciplines should give us confidence to seize opportunities.

One such opportunity is in the government's proposal to experiment with new funding approaches, giving researchers greater freedom to pursue long-range projects to tackle some of the world's greatest challenges. This is called UK ARPA, modelled on the US Advanced Research Projects Agency. This approach will be even more beneficial if its founders take a lesson from jazz, and encourage improvisation and collaboration with trusted partners within the UK and abroad.

The UK should incentivise collaboration across the country the way that the European Commission has driven Europeans to work together. We have tremendous partners throughout the UK, Europe and the rest of the world. They show that, like Miles Davis, and other jazz greats, we seek the most highly gifted collaborators from Durham to Toronto, and Paris to Shanghai.

Global Britain

Jazz artists collaborate naturally and intuitively. So do scientists. Diverse thinking and unique insights come from working together across cultures and borders. There is no substitution for such synergies. International collaboration enhances discovery and innovation.

Collaborative papers are widely read and widely used. They make a difference.

Since the EU referendum, we have advocated for policies promoting mobility and supporting international science, research and education to two Prime Ministers, four Home Secretaries and five Universities Ministers. We host visits and hold meetings with them to make our case. We have had some success. The new [Global Talent Visa](#) provides mobility to our collaborators. And the new [Post-Study work visa](#) ensures that the UK benefits from having our international students remain here after their studies.

It is important to maintain our advocacy, to keep the dialog going, and to push for what we believe in, no matter how often the government leadership changes.

We hear a lot of post-Brexit talk about “Global Britain”. When it comes to research, Global Britain and the EU go hand in hand. The idea that, after Brexit, the UK will focus on collaborating with “the rest of the world”, is a fallacy. At Imperial, we collaborate with 193 countries. In the past five years some 62% of our research papers have an international co-author.

Thanks to decades of European research support, and 24 years of Curie Fellowships, the UK and Europe are strongly connected. Our collaborations around the world benefit from our collaborations in Europe. Almost 60% of Imperial’s papers in collaboration with a US co-author **also have** a European co-author. This multi-way working is true for almost half of all our international publications.

Thus, Global Britain benefits greatly from the primacy of our collaborations in Europe. In order to most effectively collaborate with the rest of the world, Britain needs to maintain and build upon its European network.

Horizon Europe must work for the benefit of all, no matter what happens in other Brexit negotiations. The European Commission should consider Britain as its number one candidate for Horizon Europe Associate Membership. The UK government should do all that it can to make sure that we are first in the queue.

This is definitely a place where the UK and the EU can follow Brexit with a right note.

Courage to improvise and take risks

My favourite album, *Kind of Blue*, illustrates my themes of foundations, collaborations and

risk-taking. Miles had a deep **foundation** in musical structure. He **collaborated**. In creating *Kind of Blue*, he took **risks**: He brought together a very talented group of musicians who didn’t rehearse. He threw out convention and tried a new style. They recorded in a new location. And, they made history. The new “modal” style liberated soloists to improvise more freely. The result is sublime and beloved by millions.

How can we make room for our own improvisation? How can we invent, discover, collaborate and define new directions?

We are a source of new ideas. We collaborate. We can take risks.

We created the [President’s Excellence Funds](#), which motivate our academic community to try new, more risky or radical research or teaching. For instance, Professors Mike Warner and Mengxing Tang had the crazy idea to use seismic imaging technology to see inside the human brain. Or the way our Chemists are using the Advanced Hackspace to give students practical challenges to develop as scientists and innovators.

We have had the courage to create and support new departments such as Biomedical Engineering and the Dyson School of Design Engineering. We have forged new ties with online education providers producing some of the world’s best Coursera and EdX courses in areas from mathematics to public health.

These new endeavours challenge students and staff alike to think, study and explore differently.

Enablers

One thing that greatly enables our risk taking, is the confidence that our generous benefactors have in what we do. Our strong foundation and compelling opportunities to make a difference, have inspired some wonderful philanthropists to make our ideas a reality.

Our world-leading School of Public Health, is beginning construction in White City and will have an incredible impact on that community. Our alumna, Marit Mohn and her family saw that potential, and have driven it forward with a landmark donation for the Mohn Centre for Children’s Health and Wellbeing. There, we will support pioneering research, education, and community engagement to improve the diagnosis, prevention and treatment of childhood illness. A pioneering White City cohort study will provide insights to improve the lives of children everywhere.

The global attention on the Abdul Latif Jameel Institute for Disease and Emergency Analytics, or J|IDEA was inevitable. Whether Coronavirus, Ebola, Influenza or Chronic malnutrition, we carry out the pivotal research on epidemics of all sorts. Community Jameel has amplified and focused our work in ways that are clearly having impact around the world. We respond to crises, and we find ways to create strong and resilient health systems to meet future health challenges and threats. The transformative support from Community Jameel builds upon strong foundations from the MRC Centre for Global Infectious Disease Analysis. Thanks to Community Jameel, we have a better understanding of, and are better able to manage, diseases and emergencies, wherever they occur.

Other donors have provided pivotal support through chairs in paediatrics, environmental public health, programmes in haematology, cancer research, and our community engagement. With their support, we can discover, invent, collaborate and take risks.

Close

There are many challenges ahead. Misinformation, disease, climate change, global mobility, funding trends and government priorities.

Like a great jazz ensemble, we will build upon our strengths, collaborate with partners new and old, seize opportunities, improvise and create.

Our foundations. Our collaborations. Our courage to take risks. Together we will find solutions to the challenges of these times.

Remembering:

“It’s not the note you play that’s the wrong note – it’s the note you play afterwards that makes it right or wrong”.

Together we will find the right note.

www.imperial.ac.uk/president